



COLORADO MULTI-JURISDICTIONAL VEST ADVISORY COMMITTEE

MINUTES

Meeting No. 02-2006

*October 3, 2006
633 Seventeenth Street, Suite 1200
Denver, Colorado 80202*

The fourth meeting (Meeting No. 02-2006) of the Colorado Multi-Jurisdictional Vest Advisory Committee was called to order on October 3, 2006, at 8:31 a.m.

MEMBERS PRESENT

Colorado Department of Personnel and Administration (DPA)

Jeffrey Wells, Executive Director
Rod Wolthoff, Committee Chair
Michael Wallace, Committee Vice Chair
Ronda McGovern, *Staff*



Law Enforcement Representatives

Master Sergeant Deb Garde, Illinois State Police
Sergeant Marek Rybkowski, Denver Police Department
Major Lee Lindsay, Utah Department of Corrections
Officer Nancy Gifford, Colorado Springs Police Department
Officer John Abraham, Seattle Police Department
Robert Dirnberger, Colorado State Patrol
Cindy Fredriksen, Colorado State Patrol
Catherine Bowman, Mesa, AZ Police Department



Manufacturer Representatives

Georg Olsen, US Armor
Terry Riccardi, US Armor
Stephen Armellino, US Armor
Jody Eberhart, First Choice Armor
Jim Layman, United Shield
Mike Ott, First Choice Armor (Non-Voting Member)
Terry Neve, Neve's Uniforms (Non-Voting Member)





State Agency Representatives

Frank Volk, Utah Purchasing Department
Ronda Miller, Nevada Division of Purchasing
Elizabeth Kozubik, Colorado Department of Corrections



OTHER ATTENDEES

Katie McMillan, MSA
Al Johnson, Armor Express
Mark Smith, Armor Holdings
Jim Pledger, ArmorShield USA
Scotty Wylie, Gator Hawk Armor
Kurt Osborne, Survival Armor
David Strum, ForceOne
Tim Ways, Composite Armor
James Gonzales
David Hand
Felicity Ferguson



I. Introductions and Initial Remarks

Committee Chair Rod Wolthoff welcomed those in attendance and called the meeting to order at 8:31 a.m. Mr. Wolthoff explained that the Committee had not met since March 20, 2006, because it was necessary to monitor recent NIJ developments prior to discussing new CVT standards. He then summarized the Committee's goals and reviewed past meeting minutes. Mr. Wolthoff introduced Committee Vice Chair Michael Wallace.

All individuals present then briefly introduced themselves to the Committee, and a quorum was established.

Discussion:

Prior to January 2006, only two significant body armor standards existed. Five standards have now been published: DEA, DHS, FBI, NIJ and CVT. The NIJ is in the process of developing new standards. Mr. Wallace stated that several members of the Committee are involved in this process with the NIJ, but they will not discuss any specific changes being contemplated by the NIJ.

In March 2006, Colorado issued a third CVT bid solicitation. The goal for the third solicitation is to increase the number of qualifying manufacturers because many law enforcement agencies' reimbursement policies require compliance with NIJ and CVT standards. In July 2006, the solicitation was suspended indefinitely due to the publication of the new DEA, DHS and FBI solicitations. Mr. Wallace stated that, because manufacturers will be required to test approximately forty separate vests to meet the five existing standards, the CVT standards should be such that CVT qualification would allow for qualification under all other standards.

Mr. Wallace opined that the new standards do not incorporate all of the requirements that end users and officers have requested. The new NIJ standard will be an improvement, but the CVT standards should be comprehensive and should increase the confidence of end users. Catherine Bowman stated that vests meeting all standards would be recommended to officers in her department.

Mr. Wolthoff then introduced Jeffrey Wells, Executive Director of the Colorado Department of Personnel and Administration. Mr. Wells welcomed those in attendance and summarized the events leading to the establishment of the Committee.

Mr. Wells stated that the Committee has been an influential force in raising body armor standards across the country. He encouraged the members of the Committee to focus also on user training in wear, care, fit and maintenance. He opined that an increase in user training would certainly increase user safety.

Mr. Wells informed those in attendance that the Western States Contracting Alliance (“WSCA”) is now providing the Committee with budgetary funds in support of the Committee’s goals to attract numerous manufacturers, create a list of CVT qualified products, and to centralize procurement.

II. Administrative

Committee Participation:

Mr. Wallace reiterated that it is a goal of the Committee to maintain a member balance between law enforcement personnel, agency representatives and manufacturers. Non-members are welcomed to attend and participate at Committee meetings, but they will not be permitted to vote on official Committee actions.

III. Colorado Verification Test History and Test Data/Solicitation Specifications

Mr. Wallace provided a PowerPoint presentation summarizing the recent solicitations by the DEA, DHS and FBI, as well as the April 2006 CVT solicitation. *See Attached File: [CO-MJVAC October 3, 2006](#)*

Discussion:

Mr. Wallace reviewed the DEA, DHS and FBI solicitations in order to inform the Committee members about the changes the industry is now facing and in order to illustrate the needs of the individual agencies.

Georg Olsen and Stephen Armellino discussed the requirement in the latest CVT solicitation that Ballistic Limit Determination Test results will not have more than a 5% total deviation from the original NIJ 0101.04 certification test results. They voiced concern that the 5% deviation requirement is too low. Mr. Wallace stated that the Committee could revisit that standard and revise it if necessary.

At the November 4, 2005 Body Armor Manufacturer Discussion Group Meeting, Committee members and other attendees collaborated in an effort to agree on acceptable used vest testing standards. As a result, the Verification Equivalency Shot Test (“V.E.S.T.”) Protocol was established and included in the 2006 CVT Solicitation. The V.E.S.T. Protocol would demonstrate a simple pass/fail result. None of the other existing solicitations include a similar requirement. *See p. 7 of Attached File: [CO-MJVAC Meeting Minutes: March 20, 2006](#)*

Mr. Wallace reported that some NIJ representatives were impressed with the concept of the V.E.S.T. protocol. However, the new NIJ standards will most likely not include pass/fail requirements. Mr. Wallace suggested that the Committee consider revisions to the CVT solicitation to include a threshold standard based on reference velocity.

Reference Velocity Discussion:

Major Lee Lindsay's subcommittee has developed proposed reference velocity standards. Jody Eberhart stated his opinion that reference velocity standards are more difficult for end users to understand and that the CVT solicitation should retain pass/fail components.

Major Lindsay stated that law enforcement personnel would like to have data and pass/fail statistics based on 200 fps above reference velocity.

Mr. Armellino opined that 200 fps above reference velocity is an extreme standard to maintain throughout the five year warranty period. He believes that the fps margins should differ over years one through five. Mr. Wallace is concerned, however, that a sudden decline in performance between years might not be detected. He believes that a 200 fps standard creates a large enough buffer to detect such declines in performance. Mr. Armellino, Mr. Wallace and Master Sergeant Deb Garde agreed that additional data is required in order to determine whether or not the 200 fps standard is preferential, but that the 200 fps standard is an adequate starting point.

The meeting was adjourned at 9:59 a.m. and called back to order by Mr. Wallace at 10:22 a.m.

Mr. Wallace resumed his summary of the DEA, DHS and FBI solicitations:

The DEA solicitation requires lab testing of eight panels including fragmentation testing at varying velocities.

The DHS purchases body armor for several agencies, including FEMA, the Secret Service, ICE, and the U.S. Coast Guard. The DHS solicitation specifies IIIA level vests that are NIJ 0101.04 compliant, and specifies the manufacturers of the test ammunition to be used. Mr. Wallace recommended that the CVT solicitation also specify test ammunition manufacturers.

The FBI solicitation requires that test be performed with gelatin on standard sized vests (44"-46" panels), and it does not specify which "current duty rounds" will be used. The FBI requires testing of twenty panels. Dry and wet testing, edge testing, heat testing, and cold testing are included.

Mr. Wallace voiced his concern that the FBI was requiring only large panel tests. He recommended that the CVT solicitation specify a range of panel sizes. Mr. Olsen stated that all panel sizes are manufactured using the same processes, and although bfs results might differ between the sizes, penetration results will be the same.

IV. General Discussions

Discussion:

Mr. Wallace initiated a discussion and debate regarding potential revisions to the March 2006 CVT solicitation. Mr. Wallace suggested that the new CVT solicitation specify test rounds and manufacturers of testing ammunition. He also recommended eliminating tests of IIA vests by requiring tests on II and IIIA vests only. Major Lindsay reported that his agency has never authorized the use of IIA vests. Mr. Olsen stated that the Committee might encounter resistance from end users and agencies if it attempted to remove IIA vests from the solicitation. Mr. Wallace offered to address agencies' concerns if they encounter resistance from their employees.

Mr. Wallace stated that he does not want to include heat testing or cold testing in the CVT. Catherine Bowman stated that certain climate issues would be discerned through used vest testing.

Contact Shots:

Mr. Wallace reported that a contact shot occurs when the muzzle of the gun is close enough to vest that the muzzle flash interferes with the fibers of the vest prior to the round exiting. Zero officers wearing body armor have been killed by contact shots, but officers are concerned. Including contact shot requirements in the CVT would increase officer confidence. Ms. Bowman opined that officers will be more concerned with how many officers have been *shot* with contact, not how many officers have been killed.

Mr. Wallace stated that the DEA and FBI contact shot protocols could be examined in order to develop a protocol for the CVT. The FBI defines a contact shot as occurring with the muzzle of the gun as close to the vest as possible without dimpling the outer carrier. Mr. Wallace stated that, because muzzle flash cannot be replicated, it should not be included in the specifications.

Ms. Bowman stated that officers will require information regarding the effects of muzzle flash on the integrity of a vest. She could not, in good faith, inform officers that a vest had passed a contact shot test if muzzle flash was not included in the test. Mr. Wallace noted that the FBI solicitation does not include muzzle flash, and that the test must increase officer confidence while still being practical. It is unfortunate, but every real-life scenario cannot be duplicated.

Review of Used Vest Testing Protocol:

On April 13, 2006, Major Lindsay's subcommittee presented a proposal for used vest testing protocol. The members of the subcommittee came to the consensus that a "penetration" should be defined as a complete perforation of the armor by a bullet or by a fragment of a bullet, causing a hole that passes completely through the panel.

The meeting was adjourned at 12:00 p.m. and called back to order by Master Sergeant Garde at 12:42 p.m.

V. CVT Bid Specification Revisions

Panel Size:

After significant discussion, the following motions were made:

- Motion:** Mr. Olsen moved that the CVT specifications be revised to require used vest testing of size medium regular female panels, rather than size large female panels. Mr. Eberhart seconded the motion. The motion carried, with Mr. Wallace dissenting.
- Motion:** Mr. Eberhart moved that the CVT specifications be revised to require used vest testing on size large male regular panels measuring 42"-46", with chest circumference not to exceed 44" and waist circumference not to exceed 38". Mr. Olsen seconded the motion. The motion carried, with Mr. Wallace dissenting.
- Motion:** Mr. Eberhart moved that the CVT specifications be revised to require used vest testing on size medium regular female panels measuring 34"-36", with a size B-C cup, the waist circumference not to exceed 34". Mr. Olsen seconded the motion. The motion carried. Mr. Wallace was not present during the vote.

Shot Placement:

Major Lindsay's subcommittee proposed that CVT used vest testing standards require four shots per panel, for a total of eight shots per vest. After extensive debate and discussion, the following motions were made:

Motion: Major Lindsay moved that the CVT specifications be revised to require used vest testing with six shots per male large regular panel. The motion was seconded and carried unanimously.

Motion: Major Lindsay moved that the CVT specifications be revised to require used vest testing with four shots per female medium regular panel. The motion was seconded and carried, with Mr. Wallace and Master Sergeant Garde dissenting.

Motion: Major Lindsay moved that the CVT specifications be revised to require used vest testing of male large regular panels with the following shot placement standards: Shots 1, 2 and 3 placed at zero degrees in a triangle per NIJ specifications, two inches from the edge permissible. Shots 4 and 5 placed at zero degrees within a 3" diameter circle at center mass, one inch apart with no smoothing of the panel. Shot 6 placed obliquely at thirty degrees, within 1" of Shot 1 or 1" from the top of the 3" circle. The motion was seconded and carried unanimously.

The meeting was adjourned at 2:30 p.m. and called back to order by Master Sergeant Garde at 2:59 p.m.

Motion: Mr. Eberhart moved that the CVT specifications be revised to require used vest testing of medium female regular panels with the following shot placement: Shot 1 placed per NIJ specifications for Shot 1, but shot obliquely at 30 degrees, two inches from the edge permissible. Shot 2 placed at zero degrees on the left or right seam, with the opposite seam being shot on the back panel. Shots 3 and 4 placed at zero degrees within a 3" diameter circle at center mass, one inch apart with no smoothing of the panel. The motion was tabled for further discussion.

Motion: Major Lindsay moved to restore the requirement of six shots to the female panels in order to maintain consistency with male shot placement requirements. Mr. Wallace seconded the motion. After further discussion, the motion carried unanimously.

- Motion: Mr. Wallace moved that the CVT specifications be revised to require the same shot placement standards for female medium regular panels as is required for male large regular panels, with the exception of seam shots on alternate seams at Shot 2. The seam shot must be two inches from the edge. The motion was seconded and carried unanimously.
- Motion: Major Lindsay moved that trauma test requirements not be included in the CVT specifications. Officer John Abraham seconded the motion, and it carried unanimously.
- Motion: Mr. Wallace moved that the CVT require use of standard NIJ test rounds for each threat level. Officer Abraham seconded the motion, and it carried unanimously.
- Motion: Mr. Eberhart moved that CVT specifications require testing of four panels (two vests) for each threat level per model. Officer Abraham seconded the motion, and it carried unanimously.

V-50 Protocol:

Members of the Committee collaborated to develop the following V-50 standards to be used simply as references to ascertain levels of degradation of armor throughout the warranty period:

Year 0 - 200 fps above highest reference velocity (1460 for IIIA armor)
Year 1 - 170 fps above highest reference velocity
Year 2 - 140 fps above highest reference velocity
Year 3 - 110 fps above highest reference velocity
Year 4 - 80 fps above highest reference velocity
Year 5 - 50 fps above highest reference velocity

- Motion: Mr. Eberhart moved that the CVT solicitation include this V-50 protocol, and that V-50 testing occur only with 9mm test rounds. The motion was seconded and carried unanimously.
- Motion: Mr. Eberhart moved that CVT specifications indicate that Year 0 and Year 1 V-50 deviations from original NIJ certification test results may not be +/-150 fps. Major Lindsay seconded the motion. After further discussion, the motion carried. Ms. Bowman abstained.

IIA Vests:

Motion: Mr. Wallace moved that IIA vests be removed from the CVT solicitation and not considered. Mr. Eberhart seconded the motion, and it carried unanimously.

CVT Year 0 (New Vest) Testing Protocol:

Mr. Wallace stated that all CVT awarded products must first be certified by the NIJ. Once the new bid is awarded, current CVT manufacturers may have to begin used vest testing for Year 1 through Year 5. Only new models will begin testing at Year 0.

Motion: Mr. Olsen moved that CVT used vest test standards for Years 1 through 5, as revised, also be adopted as Year 0 (new vest) test standards. Mr. Eberhart seconded the motion, and it carried unanimously.

VI. Warranty of Body Armor

Mr. Wolthoff distributed copies of proposed warranty language, the majority of which reflects current DHS warranty standards.

Action Item: Prior to the next meeting of the Committee, members will review the proposed warranty language and contact Mr. Wolthoff with comments. Mr. Wolthoff and Ms. Bowman will discuss warranty issues in depth.

VII. Administrative

CVT Body Armor Qualified Products List:

Several members voiced concern that the CVT website lists tactical armor models that are not CVT awarded products.

<http://www.colorado.gov/dpa/dfp/spo/vests.htm>

Mr. Olsen opined that tactical armor should not be listed on the CVT website. He suggested that the CVT change terminology from “concealable body armor” and begin referring to specific “ballistic packages” regardless of style because tactical armor is made with the same material as the CVT awarded armor. Mr. Olsen voiced his concern that vendors will believe that tactical armor products listed on the website have passed CVT testing.

Mr. Wallace stated that “concealable” is an official NIJ term, so the CVT must also use that term. Mr. Wallace further reported that tactical armor information is provided on the website as a benefit to end users who have requested such information.

Ms. Bowman suggested that the website be revised by placing asterisks next to the tactical armor products in order to refer viewers back to the manufacturers’ CVT awarded concealable products.

Warranty/QA/QC Subcommittee:

Motion: Mr. Wallace moved to remove Major Lindsay as Chair of the Warranty/QA/QC Subcommittee because Major Lindsay is spending a significant amount of time developing used vest testing protocols and should be allowed to focus on those specific issues. The motion was seconded and carried unanimously.

Motion: Mr. Olsen moved to nominate Ms. Bowman as the new Chair of the Warranty/QA/QC Subcommittee. The motion was tabled until the next Committee meeting.

ISO Certification:

Mr. Eberhart recommended that the new CVT bid solicitation require all manufacturers to be ISO 9001 certified.

Action Item: Prior to the next meeting of the Committee, Mr. Wolthoff and Mr. Wallace will discuss the impact of requiring ISO 9001 certification in the CVT standards.

Maintenance Video:

Mr. Olsen presented a maintenance video, which was viewed without audio by some in attendance.

Scheduling:

The scheduling of the next Committee meeting was taken under consideration. Members will be notified of the next meeting date.

Motion: Mr. Wolthoff moved to adjourn the meeting. The motion was seconded and carried unanimously.

The meeting adjourned at 4:53 p.m.